

TABLE 4-2
AVERAGE ANNUAL OUTPUTS
FIRST AND SECOND DECADES

Resource Elements	BASE YEAR 1989	'90 RPA GOALS		Plan Decade 1	Plan Decade 2
		1st Decades	5th Decades		
Dams and Reservoirs					
...Forest Service	4			4	5
...other Federal	0			0	0
...other State or local	0			0	0
...private	2			2	2
Administrative Sites					
...Forest Service owned	28			15	14
...Leased	4			4	3
TOTAL BUDGET (MM\$ 1989)	15.6			13.93	12.17
TOTAL COST (MM\$ 1989)	17.7			15.40	13.65

FOREST-WIDE STANDARDS AND GUIDELINES

Forest-wide standards and guidelines provide management direction which applies to all Forest lands and prescriptions, whenever and wherever they are relevant, and to practices and activities specified in the Forest Plan. These standards and guidelines are necessary to implement the Plan in conformance with Regional Management direction and legal requirements (such as Clean Water Act, National Forest Management Act, and Endangered Species Act). No differentiation between standards and guidelines is intended; each statement of direction will receive equal treatment.

AIR QUALITY

1. Manage National Forest activities to maintain air quality at a level which meets or exceeds State and/or local government regulations.
2. Conduct prescribed fire activity only on burn days unless variances are obtained from appropriate Air Pollution Control Boards.
3. Require proper dust abatement measures to be taken prior to any activity that will result in the sustained generation of dust.
4. Coordinate prescribed burning activities with affected groups and agencies.
5. Conduct prescribed burning outside of the Yolla Bolly-Middle Eel Wilderness so that Air Quality Resource Values (AQRVs) within the Wilderness are not adversely affected. Adverse impact assessments will be conducted following the recommendations contained in the document titled "Guidelines for Evaluating Air Pollution Impacts on Class One Wilderness areas in California."

DIVERSITY

1. Maintain diversity of plant and animal communities and viable populations of wildlife, in part, through the application of the following standards and guidelines:
 - a) Within each major vegetation type, provide at least 5% of the Forest in each seral stage. These required acreages are allocated to each management area in the management area direction in proportion to the current vegetation types found therein. These goals are not intended to force or create attributes which cannot or do not occur naturally in a given area.

Seral Stages:

1 = Grass/forb stage, with or without scattered shrubs and seedlings

2 = Shrub/seedling/sapling stage.

3a = Pole/medium tree stage with canopy cover of 39% or less.

3bc = Pole/medium tree stage with canopy cover of 40% or more.

4a = Large tree stage (mature and over mature) with canopy cover of 39% or less.

4bc = Large tree stage with canopy cover from 40 to 69%.

4c+ = Overmature, large tree stage with tree canopy cover 70% or greater.

- b) Determine the specific arrangement of vegetative types and seral stages (in terms of size, distribution, and location) within each management area, necessary to meet management indicator species needs, as defined in the wildlife habitat models.
 - c) Maintain at least 15% of Federal forested lands within fifth field watersheds (20-200 square miles) in late-successional forest. This includes forested lands in all land allocations within the watershed. Protection of these stands could be modified in the future, when other portions of the watershed have recovered to the point where they could replace the ecological roles of these stands. (FSEIS ROD p. C-44)
 - d) Manage meadows and annual grasslands greater than ¼ acre in size to maintain their existing size and characteristics. Manage meadows and grasslands less than ¼ acre in size on a site-by-site basis.
 - e) Establish management zones around meadows and annual grasslands (item c above) of not less than 50 feet. Within these zones, emphasize maintenance or enhancement of horizontal and vertical structural vegetative diversity, and special habitat components such as snags, down logs and hardwoods. Management of habitat within these areas should be primarily for the benefit of wildlife and native plant communities.
- 2. Utilize, to the extent practicable, seeds and plants originating from genetically local sources of native plants when using vegetation for erosion control, fire rehabilitation, riparian restoration, forage enhancements, and other vegetation projects.
 - 3. Follow hardwood, snag, and coarse woody debris direction in the Wildlife section of these Forest-wide standards and guidelines.

FACILITIES & TRANSPORTATION

- 1. Provide and maintain those facilities necessary for the protection, use, safety, and efficient management of Forest resources and programs.
- 2. Ensure that any new facility construction is based on a needs assessment and that energy conservation opportunities are given high priority.
- 3. Coordinate the administration and management of the Forest transportation system with appropriate Federal, State, and local agencies where opportunities for improved efficiency of management can be identified. Cooperate with other Federal, State, and local agencies to achieve consistency in road design, operation, and maintenance necessary to attain aquatic conservation strategy objectives. (FSEIS ROD p. C-32)
- 4. Place local roads which are not required for administration or public access, in Maintenance Level I to minimize environmental impacts and reduce road maintenance expense. Drainage features of closed roads should be configured to ensure long term drainage and stability. Close these roads to public use after all project work has been completed.

5. Meet aquatic conservation strategy objectives for each existing or planned road: (FSEIS ROD p. C-32)
 - a) minimize road and landing locations in riparian reserves.
 - b) complete watershed analyses (including appropriate geotechnical analyses) prior to construction of new roads or landings in riparian reserves and key watersheds.
 - c) prepare road design criteria, elements, and standards that govern construction and reconstruction.
 - d) prepare operation and maintenance criteria that govern road operation, maintenance, and management
 - e) minimize disruption of natural hydrologic flow paths, including diversion of streamflow and *interception of surface and subsurface flow*.
 - f) restrict sidecasting as necessary to prevent the introduction of sediment to streams.
 - g) avoid wetlands entirely when constructing new roads.
6. Determine the influence of each road on aquatic conservation strategy objectives through watershed analysis. Meet aquatic conservation strategy objectives: (FSEIS ROD p. C-32, 33)
 - a) reconstruct roads and associated drainage features that pose a substantial risk.
 - b) prioritize reconstruction based on current and potential impact to riparian resources and the ecological value of the riparian resources affected.
 - c) close and stabilize, or obliterate and stabilize roads based on the ongoing and potential effects to aquatic conservation strategy objectives and considering short-term and long-term transportation needs.
7. Construct new culverts, bridges and other stream crossings and reconstruct existing culverts, bridges and other stream crossings, determined to pose a substantial risk to riparian conditions, to accommodate at least the 100-year flood, including associated bedload and debris. Priority for upgrading will be based on the potential impact and the ecological value of the riparian resources affected. Crossings will be constructed and maintained to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure. (FSEIS ROD p. C-33)
8. Minimize sediment delivery to streams from roads. Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping is unfeasible or unsafe. Route road drainage away from potentially unstable channels, fills, and hillslopes. (FSEIS ROD p. C-33)
9. Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams. (FSEIS ROD p. C-33)
10. Develop and implement a Road Management Plan or a Transportation Management Plan that will meet the Aquatic Conservation Strategy objectives. As a minimum, this plan shall include provisions for the following activities: (FSEIS ROD p. C-33)
 - a) inspection and maintenance during and after storm events.
 - b) road operation and maintenance, giving high priority to identifying and correcting road drainage problems that contribute to degrading riparian resources.
 - c) *traffic regulation during wet periods to prevent damage to riparian resources.*
 - d) establish the purpose of each road by developing the Road Management Objective.
11. Design and construct new roads with an outsloping surface, when appropriate to minimize concentration of water and avoid drainage problems. Also, limit road bed width except where site specific conditions indicate this would not be appropriate
12. Use road design standards that provide for resource protection and minimum post-haul maintenance on local roads.

13. Perform Forest Service maintenance activities to meet land management objectives. If maintenance objectives cannot be met in a given year (due to funding, weather, etc.), give top priority to those maintenance activities necessary to meet the essential objectives of:
 - a) providing for user safety
 - b) protecting riparian and other resources
 - c) meeting contractual and legal obligations

Maintenance activities necessary to provide an efficient transportation system would be second priority. All other maintenance activities would be of a lower priority.

14. Encourage joint construction and maintenance of roads with large private land neighbors where it is economically feasible.
15. Designate sites to be used as water drafting locations during project level analysis or as a part of road maintenance. Locate water drafting sites to minimize adverse effects on stream channel stability, sedimentation, and in-stream flows needed to maintain riparian resources, channel conditions, and fish habitat and passage. (FSEIS ROD p. C-37)
16. Fell roadside hazard trees in riparian reserves when they pose a safety risk. Utilize the standardized hazard tree definitions. Directional felling will be used to protect streambanks. Keep felled trees on-site when needed to meet coarse woody debris objectives. (FSEIS ROD p. C-37)
17. Roads used, constructed, and/or maintained under special use permit will conform to Mendocino National Forest standards and guides for protecting and maintaining resource values, including riparian dependent resources.
18. Provide for construction, reconstruction, and maintenance of the Forest trail system and ensure that design standards accommodate the user traffic designated. Specific standards and guidelines are found in the Recreation section of these Forest-wide standards and guides.
19. Review existing records to discern where abandoned facilities, such as mines and dumps, may be affected by proposed projects.

FIRE & FUELS

1. Provide for protection from wildfire, through timely detection and suppression response with appropriate forces, such that cost plus net resource loss due to wildfire is minimized. All wildfires will be contained, confined, or controlled in accordance with specific management area direction.
2. Utilize the appropriate suppression response (i.e., confine, contain, or control) for naturally occurring unplanned ignitions outside Wilderness.
3. Design fuel treatment and fire suppression strategies, practices, and activities to meet Aquatic Conservation Strategy objectives, and to minimize disturbance of riparian ground cover and vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuels management activities could be damaging to long-term ecosystem function. (FSEIS ROD p. C-35)
4. Locate incident bases, camps, helibases, staging areas, helispots and other centers for incident activities outside riparian reserves. If the only suitable location for such activities is within the riparian reserve, an exemption may be granted following review and recommendation by a resource advisor. The advisor will prescribe the location, use conditions, and rehabilitation

requirements. Use an interdisciplinary team to predetermine suitable incident base and helibase locations. (FSEIS ROD p. C-35)

5. Minimize delivery of chemical retardant, foam, or additives to surface waters. An exception may be warranted in situations where overriding immediate safety imperatives exist, or, following review and recommendation by a resource advisor, when an escape would cause more long-term damage. (FSEIS ROD p. C-35)
6. Immediately establish an emergency team to develop a rehabilitation treatment plan needed to attain aquatic conservation strategy objectives whenever riparian reserves are significantly damaged by wildfire or a prescribed fire burning outside prescribed parameters. (FSEIS ROD p. C-36)
7. Limit the size of all fires within riparian reserves. When watershed and/or landscape analysis, or province-level plans are completed and approved, some natural fires may be allowed to burn under prescribed conditions. Rapidly extinguishing smoldering coarse woody debris and duff should be considered to preserve these ecosystem elements. In Riparian Reserves, water drafting sites should be located and managed to minimize adverse effects on riparian habitat and water quality, as consistent with Aquatic Conservation Strategy objectives. (FSEIS ROD p. C-36)
8. Treat fuels to reduce the potential rate of spread and fire intensity so the planned initial attack organization can meet initial attack objectives.
9. Integrate multi-resource management objectives into fire hazard reduction efforts. Design prescribed burn projects and prescriptions to contribute to attainment of Aquatic Conservation Strategy objectives. (FSEIS ROD, p. C-36)
10. Emphasize fuels treatment efforts for fire hazard reduction purposes in the following areas:
 - Natural Fuels:
 - a. continuous, mature brush stands of more than 150 acres adjacent to or within areas of urban interface, resource investments, or high fire hazards;
 - b. continuous, mature brush stands more than 25 years old;
 - c. continuous, mature brush stands with dead-to-live ratios greater than 35%.
 - d. forested areas with excessive accumulations of natural fuels.
 - Activity Fuels:
 - a. in zones of urban interface or other high fire hazard areas;
 - b. where treatment is necessary before initiating other multi-resource management projects, e.g., reforestation.
11. Encourage cooperative agreements with other agencies and organizations to provide cost efficient and effective fire prevention, fire detection, fuels management, and fire suppression programs. Cooperate with local landowners and local, state, and federal agencies in preparing and implementing coordinated resource plans.
12. Consider the particular needs for the specific vegetative communities and sensitive plants where prescribed burning is used as a vegetation management tool (e.g. within the "shrub hardwood" type). Vary or adjust the frequency, intensity, and timing of prescribed burning proposals as necessary to protect specific vegetation types, botanical diversity, and the viability of sensitive plant species.

FOREST HEALTH

- 1 Utilize an integrated pest management (IPM) approach in the planning and implementation of all activities that influence vegetation. A full range of alternative treatments, including mechanical, cultural, biological, and chemical methods, will be considered on a project by project basis. Selection of the appropriate method(s) will be made through the environmental analysis process after consideration of the probable environmental effects, efficiency of treatment, and the cost of feasible alternatives.
2. Select chemical treatments as the treatment of choice only where their use is essential to meet management objectives. The specific requirements for the use of chemicals will be determined through the environmental analysis process.
- 3 Apply herbicides, insecticides, and other toxicants, and other chemicals only in a manner that avoids impacts that retard or prevent attainment of aquatic conservation strategy objectives. (FSEIS ROD p. C-37)
4. Identify and protect those sugar pine that appear to be blister rust resistant, during project planning and implementation. Collect seed from healthy sugar pine; screen seedlings for resistance to blister rust; and preserve rust resistant parents for regenerating local areas.
5. Incorporate pest detection, surveillance, evaluation, prevention, suppression, and post action evaluation as integral components of the IPM approach. Determine needed monitoring and implementation plans during project planning.

HERITAGE RESOURCES

1. Emphasize a well-balanced heritage resources program at all levels. Develop management plans for heritage resources focusing on inventory, evaluation, protection, interpretation, public participation, education, and research in accordance with the National Historic Preservation Act of 1966 and other legislation.
- 2 Complete a systematic program of inventory, evaluation, and management of heritage resources to protect and preserve significant heritage values.
- 3 Whenever heritage properties might be affected by an activity, protect the properties or resource sites until they are evaluated. Follow the procedures for assessing and treating any effects, and maintain the integrity and values of eligible properties, to the extent possible, as outlined in the Advisory Council on Historic Preservation's regulations (36 CFR 800).
4. Evaluate heritage properties for significance in accordance with the criteria of the National Register of Historic Places (NRHP; 36 CFR 60.4) and the guidelines found in "Procedures for the Evaluation of Historic and Cultural Properties" (prepared by the Advisory Council on Historic Preservation). Eligible properties which represent deficiencies in current historic, prehistoric, or ethnographic information will receive priority consideration for formal nomination to the NRHP.
5. Coordinate Forest management practices with concerned local Native Americans to ensure that such practices do not unduly impede access to traditional food, medicinal, and basketry resources located throughout the Forest. Continue efforts to contact knowledgeable individuals who can assist in the identification of sites of traditional importance, and protect sites of traditional importance as provided for under the American Indian Religious Freedom Act of 1978 (P L 95-341).

6. Maintain the confidentiality of specific site locations for historic, prehistoric, and traditional cultural properties
7. Emphasize the interpretation of heritage resources where the recreation experience would be enhanced, where public benefits are high, or where important for resource protection.
8. Encourage active research programs by establishing cooperative agreements or partnerships with accredited research institutions. Issue research permits under the Archaeological Resources Protection Act of 1979 (P.L. 95-96) to qualified institutions and organizations
9. Manage archaeological and historic sites, collections, and records in compliance with Section 110 of the National Historic Preservation Act of 1966 and regulations regarding the curation of archaeological collections (36 CFR 79).

LANDS

1. Emphasize ownership adjustment to improve efficiency and reduce long-term management costs once protection of basic resource values is assured. Implement through all available procedures such as exchange, purchase, and donation.
2. Use land acquisition, exchange, and conservation easements to meet aquatic conservation strategy objectives and facilitate restoration of fish stocks and other species at risk of extinction. (FSEIS ROD p. C-37)
3. Identify and attempt to secure in-stream flows needed to maintain riparian resources, channel conditions, and aquatic habitat. (FSEIS ROD p. C-37)
4. Assure that lands scheduled for exchange are kept free of encumbrances such as permits or other uses controlled by the Forest Service that exceed two years. Minimize investments in surveys, roads, and other resource management in these areas. Limit interim timber sales to salvage and/or thinning to enhance stand health and value
5. Acquire necessary road and trail rights-of-way for the existing and new additions to the transportation system needed to support resource management. Exclusive rights-of-way will normally be acquired, but nonexclusive rights-of-way will be sought where appropriate.
6. Authorize special use permits for the occupancy and use of National Forest System lands to the extent such use is consistent with management objectives for the area or as required by law, and such uses cannot be placed on private lands. Identify and require maintenance of in-stream flows needed to maintain riparian resources, channel conditions, and fish passage. (FSEIS ROD p. C-36)
7. Permit establishment of new electronic sites only when existing sites are fully occupied or shown to be inadequate for the proposed use and when the proposed site is not in conflict with other management objectives for the area. Consider potential vandalism problems when locating sites and developing permit clauses.
8. Survey, mark, and post to Forest Service standards, all needed property lines prior to implementing management activities. Solicit and participate in cooperative cost share surveys with adjacent landowners.
9. Take prompt and appropriate action to resolve all known cases of unauthorized occupancy and use of National Forest land

- 10 Limit new utility lines to existing rights-of-way limits wherever possible, or to those areas subsequently approved through an environmental assessment. The location and design of utility facilities will be consistent with the multiple use objectives of the area.
11. Provide for Federal Energy Regulatory Commission licensed actions that do not compromise the purposes of Congressionally designated areas, such as Wilderness and Wild and Scenic River areas, and that are consistent with multiple-use objectives of the area. Establish protection, mitigation, and enhancement measures for project induced effects on other resources.

12. Within key watersheds.

For hydroelectric and other surface water development proposals, require in-stream flows and habitat conditions that maintain or restore riparian resources, favorable channel conditions, and fish passage. Coordinate this process with California Department of Fish and Game and the State Division of Water Rights. During relicensing of hydroelectric projects, provide written and timely license conditions to the Federal Energy Regulatory Commission (FERC) that require flows and habitat conditions that maintain or restore riparian resources and channel integrity. Coordinate relicensing projects with the appropriate state agencies.

For all other watersheds:

For hydroelectric and other surface water development proposals, give priority emphasis to in-stream flows and habitat conditions that maintain or restore riparian resources, favorable channel conditions, and fish passage. Coordinate this process with the California Department of Fish and Game and the State Division of Water Rights. During relicensing of hydroelectric projects, provide written and timely license conditions to FERC that emphasize in-stream flows and habitat conditions that maintain or restore riparian resources and channel integrity. Coordinate relicensing projects with the appropriate state agencies. (FSEIS ROD p. C-36)

13. Locate new support facilities outside riparian reserves. For existing support facilities inside riparian reserves that are essential to proper management, provide recommendations to FERC that ensure aquatic conservation strategy objectives are met. Where these objectives cannot be met, provide recommendations to FERC that such support facilities should be relocated. Existing support facilities that must be located in the riparian reserves will be located, operated, and maintained with an emphasis to eliminate adverse effects that retard or prevent attainment of aquatic conservation strategy objectives. (FSEIS ROD p. C-36)
14. Adjust existing leases, permits, rights-of-way, and easements to eliminate adverse effects that retard or prevent the attainment of Aquatic Conservation Strategy objectives. If adjustments are not effective, eliminate the activity. Priority for modifying existing leases, permits, rights-of-way and easements will be based on the actual or potential impact and the ecological value of the riparian resources affected. For activities other than surface water developments, issue leases, permits, rights-of-way, and easements to avoid adverse effects that retard or prevent attainment of aquatic conservation strategy objectives. (FSEIS ROD p. C-36)

MINERALS & ENERGY

- 1 Maintain availability of National Forest lands for the exploration and development of mineral and energy resources. Appropriate stipulations in operating plans and permits will be the preferred means to ensure adequate protection of surface resources.
- 2 Withdraw lands from mineral entry only where other means are inadequate to accomplish management objectives.

3. Give priority to processing plans of operation involving exploration and development of energy resources and critical strategic minerals. Projects must be consistent with the management objectives for the areas in which these projects are located.
4. Process geothermal lease applications within one year from the date of receipt. Process oil and gas lease applications as funding and scheduling permit. Submit site specific lease recommendations to the Regional Forester after completion of the environmental analysis process.
5. Require a reclamation plan, approved Plan of Operations, and reclamation bond for all minerals operations that include riparian reserves. Such plans and bonds must address the costs of removing facilities, equipment, and materials; recontouring disturbed areas to near pre-mining topography; isolating and neutralizing or removing toxic or potentially toxic materials; salvage and replacement of topsoil; and seedbed preparation and revegetation with native plant species to meet aquatic conservation strategy objectives. (FSEIS ROD p. C-34)
6. Locate structures, support facilities, and roads outside riparian reserves. Where no alternative to siting facilities in riparian reserves exists, locate them in a way compatible with aquatic conservation strategy objectives. Road construction will be kept to the minimum necessary for the approved mineral activity. Such roads will be constructed and maintained to meet roads management standards and to minimize damage to resources in the riparian reserve. When a road is no longer required for mineral or land management activities, it will be closed, obliterated, and stabilized. (FSEIS ROD p. C-34)
7. Prohibit solid and sanitary waste facilities in riparian reserves. If no alternative to locating mine waste (waste rock, spent ore, tailings) facilities in riparian reserves exists, and releases can be prevented, and stability can be ensured, then:
 - a) analyze the waste material using the best conventional sampling methods and analytic techniques to determine its chemical and physical stability characteristics.
 - b) locate and design the waste facilities using best conventional techniques to ensure mass stability and prevent the release of acid or toxic materials. If the best conventional technology is not sufficient to prevent such releases and ensure stability over the long term, prohibit such facilities in riparian reserves.
 - c) monitor waste and waste facilities after operations to ensure chemical and physical stability and to meet aquatic conservation strategy objectives.
 - d) reclaim waste facilities after operations to ensure chemical and physical stability and to meet aquatic conservation strategy objectives.
 - e) require reclamation bonds adequate to ensure long-term chemical and physical stability of mine waste facilities.
8. For leasable minerals, prohibit surface occupancy within riparian reserves for oil, gas, and geothermal exploration and development activities where leases do not already exist. Where possible, adjust the operating plans of existing contracts to eliminate impacts that retard or prevent the attainment of aquatic conservation strategy objectives. (FSEIS ROD p. C-35)
9. Salable mineral activities such as sand and gravel mining and extraction within riparian reserves will occur only if aquatic conservation strategy objectives can be met. (FSEIS ROD p. C-35)
10. Include inspection and monitoring requirements in mineral plans, leases or permits. Evaluate the results of inspection and monitoring to effect the modification of mineral plans, leases and permits as needed to eliminate impacts that retard or prevent attainment of aquatic conservation strategy objectives. (FSEIS ROD p. C-35)

RANGE

1. Improve vegetation management on rangeland ecosystems through the use of the following *methods: alternative livestock management, adjustment of stocking rates, and capital investment* in nonstructural and structural improvements as appropriate.
2. Accomplish restoration of depleted rangelands based on the needs and priorities contained in the Watershed Improvement Needs (WIN) inventory and site specific allotment management decisions. Correct improper grazing practices prior to making capital investments in restoration projects.
3. Coordinate livestock grazing with other resource uses and activities on an allotment by allotment basis to minimize conflict. Compatibility with accomplishment of management objectives for the area will be the determining factor in establishing resource priorities and resolving use conflicts. Accomplish coordination through the annual operating plans and site specific allotment management decisions, prepared as specified in Appendix D. Implementation will be achieved through grazing permit administration and other management activities that may be specified in the site specific allotment management decisions.
4. Review existing grazing permits and incorporate management direction needed to assure compliance with the Forest Plan within one year of Plan approval.
5. Conduct site specific environmental analysis on existing range allotments in accordance with the schedule and guidelines in Appendix D.
6. Adjust grazing practices to eliminate impacts that retard or prevent attainment of aquatic conservation strategy objectives. If adjusting practices is not effective, eliminate grazing. (FSEIS ROD p. C-33)
7. Emphasize management of range vegetation for wildlife habitat as the primary objective on designated key wildlife areas. Any livestock grazing on such areas must be compatible with wildlife habitat objectives.
8. Manage livestock grazing to comply with the following forage utilization standards:

Retain at least 70% effective groundcover composed of vegetation, organic mulch and litter, and surface rocks on sites capable of producing it, to protect soil and water resources. On less productive sites, retain at least 90% of the potential effective groundcover. Approve site specific proposals to retain lower amounts of effective groundcover only when analysis indicates that there will be no adverse impacts to long term site productivity on or off site.

Range vegetation condition is defined in Table 4-3. The standards in Table 4-4 are designed, under general conditions, to produce healthy range vegetation. In the case of wet meadows and riparian reserves, adequate structural habitat for dependent wildlife may require taller stubble heights. Site specific resource conditions or management objectives (wildlife or fish habitat, recreation opportunities, sensitive areas, etc.) for some areas may require deviation from these standards.

These utilization standards are defined in terms of vegetation that should **REMAIN** at the end of the grazing season. **Percentage figures apply to current year's growth of key forage species on a site.** Weight and stubble height figures apply to the standing crop of all of the herbaceous species on a site.

Table 4-3, Range Vegetation Condition

Range Condition	Trend	Vegetation Condition
Excellent	Up, Down*, or Static	Satisfactory
Good	Up, Down*, or Static	Satisfactory
Fair	Up or Static	Satisfactory
Fair	Down	Unsatisfactory
Poor	Up, Down, or Static	Unsatisfactory
Very Poor	Up, Down, or Static	Unsatisfactory

* Excellent and Good condition classes in a downward trend would be acceptable as long as the rangeland remains in good condition and effective management actions are initiated to reverse that trend.

Table 4-4, Residual Vegetation Requirements

Vegetation Type and Situation	Satisfactory Vegetation Condition	Unsatisfactory Vegetation Condition
Annual Grassland, $\leq 30\%$ Slopes	500 lbs/acre	500 lbs/acre **
Annual Grassland, $> 30\%$ Slopes	750 lbs/acre	750 lbs/acre **
Upland Perennial Grassland, Season Long Grazing System	60 - 70%	80 - 90%
Upland Perennial Grassland, Deferred or Rest Rotation Grazing System	40 - 50%	50 - 60%
Wet Meadow and Riparian Herbaceous, All Grazing Systems	4" ave. stubble ht. or 60% of potential ave. ht., whichever is less	6" ave. stubble ht. or 70% of potential ave. ht., whichever is less
Wet Meadow and Riparian Shrub, All Grazing Systems	50%	65%
Type Conversion	Variable *	Variable *
Transitory Range	Variable *	Variable *

* Based upon site specific analysis and the resource objectives of individual type conversions, harvest units, and burned areas.

** The amount of residual vegetation needed to improve unsatisfactory condition annual grassland is the same as that needed to maintain satisfactory condition due to the rapid response of this vegetation type. Providing higher levels of residual vegetation and litter would not result in a greater rate of recovery.

9. Make capital investment in structural and nonstructural range improvements only where needed to protect other resource values or when cost effective.
10. Locate new livestock handling and/or management facilities outside riparian reserves. For existing livestock handling facilities inside the riparian reserve, ensure that Aquatic Conservation Strategy objectives are met. Where these objectives cannot be met, require relocation or removal of such facilities. (FSEIS ROD p. C-33)
11. Design and construct range fencing to allow for safe passage of big game. Consider big game use and movement patterns in order to minimize impacts on water, food, cover, seasonal ranges, key meadows, and openings.
12. Conduct range inspections at least once every three years on all allotments, and annually on allotments with unauthorized use, resource problems, or riparian reserves. The objective is to measure compliance with management direction specified in a) Forest Plan standards and guidelines, b) Forest Plan management area objectives, and c) the site specific allotment management decisions. When inspection reveals noncompliance, implement measures to correct the situation. Utilize the annual operating plan to adjust grazing practices, including non-use, to eliminate the adverse effects to the riparian areas.
13. Conduct condition and trend studies at least once every ten years for overall conditions on all active allotments. When trends are static on "fair" or "poor" condition range, or are downward on any range, revise the site specific allotment management decision to prescribe a strategy for achieving an upward trend
14. Limit livestock trailing, bedding, watering, loading, and other handling efforts to those areas and times that will ensure aquatic conservation strategy objectives are met. (FSEIS ROD p. C-34)
15. Utilize Coordinated Resource Management Planning wherever possible in long range allotment management planning. Cooperate with local land owners and local, State, and Federal agencies in preparing and implementing coordinated resource plans.
16. Coordinate and schedule resource management practices and activities to minimize adverse impacts on livestock operations, forage production, and range improvement.
17. Establish grazing allotments, prescribe management requirements and authorize livestock grazing for significant amounts of suitable range lands presently outside of existing allotments and Wilderness, when compatible with management area direction, and if sufficient demand for available livestock grazing arises.

RECREATION

1. Integrate recreation planning and management with other management activities through the Recreation Opportunity Spectrum (ROS) as reflected by the ROS objectives specified in this plan, and shown on the ROS map accompanying this Plan. The "Recreation Opportunity Spectrum Users Guide" will be followed to determine the applicable activities, physical settings, and recreation experiences for each ROS class. See Appendix F for a description of ROS classes. The number and type of facilities will be those appropriate to each experience level as defined by the Forest Service Manual.
2. Separate conflicting recreational uses to the extent practical and consistent with Management Area objectives.

3. Permit off-highway-vehicle use on designated roads, trails, and areas as shown on the Forest OHV map or as authorized by permit. Designated OHV use ("open areas") may be considered through the OHV Plan revision process only where there is a clear need for such designation and where it can be demonstrated that the land and resources are suitable for such use
4. Coordinate OHV planning and management with Federal, State, and local agencies, adjacent landowners, and other interested individuals and organizations.
5. Revise and implement an OHV Plan consistent with the management objectives of the Forest Plan.
6. Include direction for bicycle use on Forest trails in the revised OHV Plan.
7. Monitor the effects of OHV use to determine areas of overuse, resource conflicts, and threat to public safety. Immediate threat to life or property will be resolved through closure or other appropriate means. Accelerate maintenance where current use is found to cause adverse impacts to riparian resources.
8. Include off-highway-vehicle corridors and staging areas in the revised OHV Plan to complement a State-wide system, as recommended in the "State-wide OHV Trails Plan". The final locations and numbers of these areas may differ from the State Plan due to environmental and/or managerial constraints.
9. Consider private sector recreation permits on a case-by-case basis when use and activities cannot be reasonably accommodated on private lands, and where such use is in the public interest.
10. Prepare objectives and prescriptions for managing vegetation in and around developed sites considering short and long-term visual quality; vegetation health and vigor; protection from insects, disease, and other pests; vegetation replacement; safety hazard tree control; management objectives such as those for LSRs and RRs; and the quality of the recreation experience.
11. Minimize disturbance of fungi and lichen species, listed in table 4-5, within established recreation areas. (FSEIS ROD p. C-6)
12. Manage developed recreation facilities to eliminate barriers to persons with disabilities.
13. Provide interpretive services to direct visitors to their recreation destinations, to facilitate understanding of resource management, and to acquaint them with the unique or special features of the Forest. Design all interpretive facilities to blend with the natural landscape.
14. Manage recreation use in wilderness to discourage heavy concentrations of users, and to minimize impacts on natural systems.
15. Design new recreational facilities within riparian reserves, including trails and dispersed sites, to not prevent meeting aquatic conservation strategy objectives. Construction of these facilities should not prevent future attainment of these objectives. For existing recreation facilities within riparian reserves, evaluate and mitigate impact to ensure that these do not prevent, and to the extent practicable contribute to, attainment of aquatic conservation strategy objectives (FSEIS ROD p. C-34)
16. Work toward completing an adequate system of recreation trails, by utilizing a mix of strategies including construction, reconstruction, maintenance, and abandonment (or elimination). Abandon or eliminate from the system those trails: a) which no longer serve their original purpose, b) which do not serve current or future recreational demand, c) whose continued use is incompatible with other management objectives for given areas (e.g. aquatic conservation strategy objec-

tives), and/or d) where current use is causing soil erosion or adverse impacts to riparian and watershed resources. Inventory and evaluate heritage resources before proceeding with the abandonment or elimination of existing trails or portions of trails.

17. Adjust dispersed and developed recreation practices that retard or prevent attainment of aquatic conservation strategy objectives. Where adjustment measures such as education, use limitations, traffic control devices, increased maintenance, relocation of facilities, and/or specific site closures are not effective, eliminate the practice or occupancy (FSEIS ROD p. C-34)
18. Do not permit surface occupancy for mineral exploration, extraction or other operations within developed recreation sites under any proposed plan of operation.
19. Continue recreation special use tracts and special use permits for isolated cabins, unless a higher public need is identified through a future use determination. Future use determinations will be scheduled prior to expiration of existing permits to allow sufficient time for public comment and permittee notification.

RESEARCH NATURAL AREAS

1. Complete an inventory of potentially suitable Research Natural Areas representing the aquatic and geologic elements of the Research Natural Area System prior to scheduled Plan revision. This inventory should also include identification of areas to be considered for Special Interest Area classification as well as areas eligible for the National Registry of Natural Landmarks.

RIPARIAN & AQUATIC ECOSYSTEMS

Direction for managing and protecting riparian and aquatic ecosystems is organized into four major headings: Objectives, Analysis, and Riparian Reserve Direction.

1. Manage National Forest lands to meet the following **AQUATIC CONSERVATION STRATEGY OBJECTIVES** (FSEIS ROD p. B-11)
 - a) Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.
 - b) Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.
 - c) Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations
 - d) Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.

- e) Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.
 - f) Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.
 - g) Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.
 - h) Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.
 - i) Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.
2. Conduct Watershed Analysis to:
- a) Determine site specific riparian reserve boundaries other than those prescribed under section 3 below. To alter prescribed riparian reserve boundaries, a watershed analysis must be completed, a site specific analysis conducted and described, and the rationale for final riparian reserve boundaries presented through the appropriate NEPA decision-making process. Regardless of stream type, changes to riparian reserves must be based on scientifically sound reasoning, and be fully justified and documented.
 - b) Form a basis for determining how proposed land management activities within riparian reserves, key watersheds, and RARE II areas meet the aquatic conservation strategy objectives.
 - c) Implement ecosystem planning and management.
 - d) Provide critical information and analysis of ecosystem conditions. Watershed analysis will focus on collecting and compiling information within the watershed that is essential for making sound management decisions. It is an analytical process, not a decision-making process with a proposed action requiring NEPA documentation.
3. As a general rule, standards and guidelines for riparian reserves prohibit or regulate activities in riparian reserves that retard or prevent attainment of the aquatic conservation strategy objectives. Watershed analysis and appropriate NEPA compliance is required to change riparian reserve boundaries in all watersheds.
- a) Riparian Reserves are specified for five categories of streams or waterbodies as follows: (FSEIS ROD p. C-30, 31)
 - 1) Fish-bearing streams - riparian reserves consist of the stream and the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of two site-potential

trees, or 300 feet slope distance (600 feet total, including both sides of the stream channel), whichever is greatest.

- 2) Permanently flowing nonfish-bearing streams - riparian reserves consist of the stream and the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance (300 feet total, including both sides of the stream channel), whichever is greatest.
- 3) Constructed ponds and reservoirs, and wetlands greater than 1 acre - riparian reserves consist of the body of water or wetland and: the area to the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or the extent of unstable and potentially unstable areas, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance from the edge of the wetland greater than 1 acre or the maximum pool elevation of constructed ponds and reservoirs, whichever is greatest.
- 4) Lakes and natural ponds - Riparian Reserves consist of the body of water and: the area to the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or to the extent of unstable and potentially unstable areas, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance, whichever is greatest.
- 5) Seasonally flowing or intermittent streams, wetlands less than 1 acre, and unstable and potentially unstable areas - This category applies to features with high variability in size and site-specific characteristics. At a minimum, the riparian reserves must include: the extent of unstable and potentially unstable areas (including earthflows); the stream channel and the area extending to the top of the inner gorge; the stream channel or wetland and the area from the edges of the stream channel or wetland to the outer edges of the riparian vegetation; and extension from the edges of the stream channel to a distance equal to the height of one site-potential tree, or 100 feet slope distance, whichever is greatest.

A site-potential tree height is the average maximum height of the tallest dominant trees (200 years or older) for a given site class.

Intermittent streams are defined as any nonpermanent flowing drainage feature having a definable channel and evidence of annual scour or deposition. This includes what are sometimes referred to as ephemeral streams if they meet these two physical criteria.

- b) Riparian Reserve Standards and Guidelines: (standards and guidelines for specific types of management within riparian reserves are found in the applicable resource management area, e.g. Fire and Fuels, Minerals, etc.)
 - 1) Identify in-stream flows needed to maintain riparian resources, channel conditions, and fish passage. (FSEIS ROD, p. C-37)
 - 2) Do not use mitigation or planned restoration as a substitute for preventing habitat degradation. (FSEIS ROD, p. C-37)
 - 3) Analyze the risks to watershed and riparian values posed by ongoing and proposed research activities within key watersheds and riparian reserves. If significant risk is present and cannot be mitigated, study sites must be relocated. Some activities not

otherwise consistent with the objectives may be appropriate, particularly if the activities will test critical assumptions of riparian reserve and key watershed standards and guidelines; will produce results important for establishing or accelerating vegetation and structural characteristics for maintaining or restoring aquatic and riparian ecosystems; or the activities represent continuation of long-term research. These activities should be considered only if there are no equivalent opportunities outside of key watersheds and riparian reserves. (FSEIS ROD, p. C-38)

- 4) Identify and control the cause of riparian area degradation prior to initiating restoration projects.
- 5) Approve the use of heavy equipment within riparian reserves for riparian habitat restoration only after an interdisciplinary review.
- 6) Fell trees in riparian reserves when they pose a safety risk. Utilize the standardized hazard tree definitions. Keep felled trees on-site when needed to meet coarse woody debris objectives. (FSEIS ROD, p. C-37)

SOILS & GEOLOGY

1. Develop specific soil evaluation and mitigation measures for each project that has the potential to impact the soil resource.
2. Identify and evaluate areas of known or suspected instability as a part of project planning. Protect areas with a high probability of mass wasting from ground disturbing activities.
3. Protect long-term soil productivity in controlled burn prescriptions through the use of "Mendocino National Forest Guidelines for Prescribed Burning of Chamise/Chaparral", and by meeting aquatic conservation strategy objectives.
4. Enhance soil productivity through fertilization on selected sites to increase vegetative growth, where such treatments are shown to be cost effective. Selection of sites for fertilization shall avoid serpentine soils to protect the diversity of native plant species, the viability of sensitive plant populations, and long term soil productivity. Apply fertilizers only in a manner that avoids impacts that retard or prevent attainment of aquatic conservation strategy objectives (FSEIS ROD p. C-37)
5. Develop and apply erosion control plans to road construction, mining, recreation developments, and other site disturbing projects. Use the Soils and Geologic Resource Inventories for predicting the need and extent for erosion control measures.

SPECIAL INTEREST AREAS

1. Upon approval of the Forest Plan, the boundaries of the Snow Mountain Back Country Scenic Area and the Middle Fork Stony Creek Scenic Area shall be adjusted to stay within the boundaries of the Snow Mountain Wilderness. Management requirements associated with Wilderness designation will take precedence over requirements of Scenic Area designation, because the requirements of Wilderness designation are more restrictive than those of Scenic Area designation.
2. Complete an inventory of potentially suitable Special Interest Areas prior to scheduled Plan revision. During the environmental analysis for individual projects, consideration will be given to the potential suitability of the area for Special Interest Area classification.

- 3 Protect all areas (Twin Rocks, Keller Lake, Blue Banks, and Anthony Peak) recommended for classification as Special Interest Areas from any activities that could detract from their special qualities until a final classification decision is reached.

THREATENED, ENDANGERED, AND SENSITIVE (TES) PLANTS (including Bryophytes, Fungi, and Lichen)

1. Manage sensitive plants to ensure that species do not become threatened or endangered because of Forest Service action
2. Manage TES plants proactively with the goal of delisting sensitive species where that opportunity occurs.
3. Inventory and monitor TES and special interest plant populations. Schedule inventories of suitable and potentially suitable habitat for completion prior to scheduled Plan revision. Manage all TES plant species known to occur on the Mendocino to maintain species viability.
4. Develop species/habitat management guides to identify population goals and compatible management activities/prescriptions that will maintain or improve viability.
5. Incorporate site specific requirements for maintaining botanical diversity and the viability of TES plant species known to occur in the area into the planning and design of proposed fire rehabilitation and revegetation activities, as well as any other activities which have the potential to affect botanical diversity or the viability of TES plants.
6. Survey and Manage, within all land allocations, for some species of bryophytes, vascular plants, fungi, and lichens.
 - a) Manage known sites of species listed under category 1 in table 4-5. Acquire information on these known sites, and make this information available to project planners. Use this information in the design or modification of activities. In most cases, the appropriate action will be to protect relatively small sites on the order of tens of acres. For some species, including some vascular plants, the appropriate action will include using specific management treatments such as prescribed fire. For rare and endemic fungus species, areas of 160 acres should be temporarily withdrawn from ground disturbing activities around known sites until those sites can be thoroughly surveyed and site specific measures prescribed. Protect known and newly discovered sites for *Pedicularis howellii* from grazing by all practicable steps to ensure that the local populations of the species will not be impacted. (FSEIS ROD p. C-4, 5, 6)
 - b) Conduct surveys, within the known ranges, for species listed in category 2, table 4-5, prior to ground disturbing activities implemented in fiscal year 1999 and beyond. These surveys may be conducted at a scale most appropriate to the species, and, for most species, the surveys would start at the watershed analysis level with identification of likely species locations based on habitat. Likely locations would then be thoroughly searched prior to implementation of activities. For some species, the identification of likely sites may be most appropriately done at the scale of individual projects. Design surveys for maximum efficiency, and utilize multispecies surveys where they would be most efficient. Design surveys to minimize the number of site visits needed to acquire credible information. (FSEIS ROD p. C-5)
 - c) Establish managed sites and standards and guidelines for species located during surveys described above at b). (FSEIS ROD p. C-5)

- d) Conduct extensive surveys for species in category 3 listed in table 4-5, to find high priority sites for species management. Specific surveys prior to ground disturbing activities are not required. Extensive surveys will be done according to a schedule that is most efficient, and sites will be identified for protection at that time. Extensive surveys are recommended primarily for species whose characteristics make site and time specific surveys difficult. For example, some fungi only produce fruiting bodies under specific climatic conditions, so finding their location may take several years or longer. Extensive surveys must be under way by 1996. (FSEIS ROD p C-5, 6)
 - e) Participate in general regional surveys for species in category 4 listed in table 4-3, designed to acquire additional information and to determine necessary levels of protection. These surveys will be initiated no later than fiscal year 1996 and will be completed within 10 years (FSEIS ROD p. C-6)
7. Minimize intensive burning, unless appropriate for certain specific habitats, communities or stand conditions. Plan prescribed fires to minimize the consumption of litter and coarse woody debris. Minimize soil and litter disturbance resulting from yarding and operating heavy equipment. Reduce the intensity and frequency of site treatments. Soil compaction, and removal or disturbance of humus layers and coarse woody debris may impact populations of fungi. (FSEIS ROD p C-44)

TIMBER & OTHER FOREST PRODUCTS

- 1. Prohibit timber harvest, including fuelwood cutting, in riparian reserves, except as described below. Riparian reserve acreage shall not be included in calculations of the CAS land base. (FSEIS ROD p. C-31, 32)
 - a) Where catastrophic events such as fire, flooding, volcanic, wind, or insect damage result in degraded riparian conditions, allow salvage and fuelwood cutting if required to attain aquatic conservation strategy objectives.
 - b) Salvage trees only when watershed analysis determines that present and future coarse woody debris needs are met and other aquatic conservation strategy objectives are not adversely affected.
 - c) Apply silvicultural practices for riparian reserves to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain aquatic conservation strategy objectives.
- 2. Locate cableways and skyline corridors to minimize impacts to riparian reserves. Locate skid trails outside of riparian reserves until completion of a watershed analysis. Fully suspend logs above streambanks during yarding. Use directional felling to protect streambanks.
- 3. Maintain at least 15% of federal forest lands within fifth field watersheds (20-200 square miles) in late-successional forest. This includes forested lands in all land allocations within the watershed. Protection of these stands could be modified in the future, when other portions of the watershed have recovered to the point where they could replace the ecological roles of these stands. (FSEIS ROD p C-44)
- 4. Silvicultural Systems
 - a. Selection and application of silvicultural systems for lands managed for sustained timber yields (suitable timber lands) will be that system which best meets long-term resource management objectives for the area. Silvicultural objectives for matrix lands should in-

clude: (1) production of commercial yields of wood, (2) retention of moderate levels of ecologically valuable old growth components such as snags, logs, and relatively large green trees, and (3) increasing ecological diversity by providing early successional habitat (FSEIS ROD p. B-5, 6) When determining harvest prescriptions within the even aged silvicultural system, emphasize green tree retention, thinning, or shelterwood prescriptions to provide a genetic legacy that bridges past and future forests.

- b. Base the selection of the harvest cutting method for a specific area on the criteria and standards contained in the Regional Guide for the Pacific Southwest Region.
- c. Base silvicultural prescriptions for special areas on the management emphasis designated for that area (e.g. providing wildlife habitat or protecting visual resources).
- d. Base silvicultural prescriptions on the results of an environmental analysis performed by an interdisciplinary team, and a thorough evaluation of stand conditions. All prescriptions shall be signed by a Certified Silviculturist.

5. Forest Openings

- a. Consider openings created by timber harvest as no longer being an opening when the number of trees free to grow meet minimum stocking requirements and have reached 4.5 feet in height. The Forest Supervisor may approve a requirement for greater heights to meet other resource objectives. The minimum stocking requirements are:

<u>Forest Type</u>	<u>Trees per acre</u>
Red Fir	200
Mixed Conifer	150

- b. Generally limit the size of individual stand openings created by timber harvest to 20 acres or less, except in the case of catastrophic occurrences, such as fires, windstorms, and insect attacks, or where necessary to meet desired future conditions of biological diversity.
- c. Locate openings so that they will generally be surrounded by timber stands five acres or larger in size, except that on a case-by-case basis openings may have up to 15 percent of their periphery in common with other openings. Vary openings in size to fit resource objectives or natural variation in vegetation and topography and will normally not result in leave strips or areas less than logical harvest unit size between openings.

6. Regeneration

- a. When trees are cut to achieve timber production objectives, make cuttings in such a way as to assure that the technology and knowledge exists to adequately restock the lands within five years after final harvest.
- b. Where even-aged management is practiced, thrifty understory trees including seedlings, saplings, and pole sized trees will be maintained and protected, to the extent practicable, to reduce visual impacts by maintaining a continuous forest cover, to lessen effects of harvest on soils, watersheds, and biological diversity; and to reduce the amount of time between harvest and establishment of a new stand.
- c. Where shelterwood cutting is used, remove the overstory as soon as adequate stocking is achieved and site modification (shelter) is no longer needed. Underplant as necessary to ensure acceptable stocking levels.

- d. Regenerate stands with appropriate tree species that will approximate historic species mixture. Use blister rust resistant sugar pine to help maintain the integrity of sugar pine in the mixed conifer ecosystem.
- e. Avoid leaving mistletoe infected trees when residual overstory trees are retained; favor non-host tree species when regenerating under a mistletoe infected overstory; or kill infected overstory trees within 10 years of regeneration.

7. Conifer Release

- a. Release conifers when necessary to free them from competing vegetation. Utilize a variety of methods including spraying with herbicides, hand or mechanical cutting, or other treatments to control plant growth that is competing with the desired trees.
- b. Consider all types of release and base the selection of the particular treatment method on a site specific analysis of the relative effectiveness, environmental effects, and costs of the feasible alternatives. The evaluation criteria used to determine which method to use include (but are not limited to):
 - 1) Access (available roads to the site).
 - 2) Size of plantation units and amount of competition.
 - 3) Aquatic conservation strategy objectives.
 - 4) Impacts on soil, fuels, wildlife, fish, TES plants, visual quality, and heritage resources.
 - 5) Ability to retard growth and reduce density of competing plants.
 - 6) Worker and public safety.
 - 7) Ability to protect plantations from damage due to fire, insects, or disease.
- c. Restrict hand release to slopes less than 60%, unless a hazard analysis indicates it is safe to do so.
- d. Recommend herbicides for use in operational projects only after consideration of all alternatives (based on an analysis of their effectiveness, specificity, environmental impacts, and benefit-cost) clearly demonstrates that use of the herbicides is essential to meet management goals.
- e. Use only those herbicides registered by the Environmental Protection Agency (EPA) for the planned treatments and follow all label instructions and precautions.
- f. Fully comply with all aspects of the Federal Insecticide, Fungicide, and Rodenticide Act (as amended), the National Environmental Policy Act, and other appropriate laws and regulations, whenever it is necessary to use registered pesticides to achieve resource management objectives
- g. Apply herbicides, insecticides, and other toxicants, and other chemicals only in a manner that avoids impacts that retard or prevent attainment of aquatic conservation strategy objectives. (FSEIS ROD p. C-37)

- h. Utilize livestock as appropriate to aid in control of vegetation competing with conifers.

8 Precommercial Thinning

- a. Utilize precommercial thinnings where they will decrease the time to the first commercial thinning cut, or to a final harvest cut, or protect plantations and natural stands from insect or disease attack, or to decrease the time to achieve late seral stage conditions where desired. Balance cost effectiveness with multiple use goals.
- b. Select leave trees that are free from dwarf mistletoe whenever possible. In stands heavily infected with dwarf mistletoe, select leave trees that have the lowest Hawksworth mistletoe ratings and non-host species, including hardwoods.
- c. Precommercial thinning will be conducted in such a manner as to leave standing trees in riparian areas as a source of litter for soil cover, and to help maintain bank stability. Trees which are felled, will not be deposited in stream channels. They may be left on the streambank to reduce erosion, but not in such concentrations that create an unacceptable fire hazard.

9. Intermediate Harvests

- a. Utilize commercial thinnings where they are necessary to achieve stocking control and to increase the total yields of useful material from a stand when it can be shown to be economical or where necessary for forest health.
- b. Plan sanitation harvests when necessary to limit the spread of insects and disease and to improve or maintain net stand growth prior to regeneration cutting. Select leave trees that are free from dwarf mistletoe whenever possible. In stands heavily infected with dwarf mistletoe, select leave trees that have the lowest Hawksworth mistletoe ratings or non-host species, including hardwoods.
- c. Schedule salvage harvests to utilize merchantable timber killed or seriously damaged by fires, insects, winds, floods, landslides, etc. consistent with riparian reserve standards and guides or wildlife habitat capability. Ensure snag requirements detailed in the Wildlife and Fish section of these Forest-wide standards and guidelines are satisfied.

10. Final Harvests

- a. Retain at least 15% of the area associated with each cutting unit (stand). Only matrix lands count toward the 15%. Generally, 70% of the total area to be retained should be aggregates of moderate to larger size (0.2 to 1 hectare or more) with the remainder as dispersed trees or smaller clumps. To the extent possible, patches and dispersed retention should include the largest, oldest live trees, decadent or leaning trees, and hard snags occurring in the unit. Patches will be retained indefinitely. Snag recruitment trees left to meet an identified, near-term (less than 3 decades) snag deficit do not count toward green tree retention requirements. (FSEIS ROD p. C-41, 42)
- b. Exempt intermediate harvest (thinning) of young, even aged stands from the 15% retention standard. (FEIS ROD p C-41)
- c. Use shelterwood cutting where needed to provide shade and reduce moisture stress for regeneration, and where needed to meet multiple-use objectives.
- d. Use selection harvest on areas where it is needed to meet multiple-use objectives or to facilitate regeneration on difficult sites.

- e. Retain hardwoods, snags, and coarse woody debris on matrix lands as described in the Wildlife and Fish section of these Forest-wide standards and guides.

11 Logging Systems

- a. Generally confine tractor logging to sustained slopes of less than 35 percent. When possible, limit skid trails to 15 percent of the harvest area and tractor slash piling to the dry season
- b. Use cable logging systems (highlead, short and long-span skyline) where tractor logging is impractical or where required to meet other resource management objectives.
- c. Use helicopter, balloon, or new logging systems when other logging systems cannot be used because of problems associated with terrain, deflection, access, compaction, or meeting aquatic conservation strategy objectives

12. Special Forest Products

- a. Manage plant material collected to ensure sustainability and the conservation of plant diversity. Educate collectors and the general public about the ecology of the plants collected and harvesting techniques which reduce impacts to the resource.
- b. Maintain awareness of the cultural values placed upon certain plant species and the activity of collecting.
- c. Identify specific collecting areas designated for tribal collecting in consultation with Tribal Governments, where there are potential conflicts between commercial and traditional collection.

VISUAL RESOURCES

- 1. Manage areas to provide the viewing public with characteristic natural appearing landscapes in accordance with the visual quality objectives specified in this Plan and as depicted on the included Visual Quality Objectives Map. Proposed activities which would cause deviation from the adopted VQOs will require environmental analysis and Forest Supervisor approval. The following are specific standards and guidelines for each objective.

- a. Preservation VQO:

Manage Wilderness with an emphasis on ecological processes, but allow for activities with low visual impacts, such as trails and trail related improvements that are well sited for maximum blending into the landscape. Manipulation of vegetation should appear to be natural within one year.

- b. Retention VQO:

- 1) Foreground Distance Zone - Manage vegetation for diversity of species common to the area, with a range of ages and size classes up to and including trees with old growth characteristics. Normally, timber harvest openings will be limited to one acre. Uneven-aged silvicultural systems and special cutting methods are permitted. Impacts of management activities in highly visible foreground areas will be reduced through special treatments such as leaving residual vegetation, screening, reshaping timber harvest units, and disposing of logging slash.

- 2) Middleground Distance Zone - Manage vegetation with a range of ages and size classes. Even-aged, uneven-aged, and special cutting may be applied. Normally, timber harvest openings will be limited to ten acres; they will be screened and/or reshaped as necessary to maintain the characteristics of the natural landscape.
- c. Partial Retention VQO (slightly altered landscape):
- 1) Foreground Distance Zone - Manage vegetation for a diversity of species common to the area, with a range of ages and size classes up to and including mature timber. Normally timber harvest openings will be limited to five acres. Even-aged, uneven-aged, and special cutting may be applied. Impacts of management activities in highly visible foreground areas will be reduced through special treatments, as mentioned above in the discussion for the Retention VQO.
 - 2) Middleground Zones - Manage vegetation with a range of ages and size classes. In addition to visually sensitive areas, this VQO applies to LSRs, former RARE II areas not allocated to the Backcountry prescription, and areas designated as semi-primitive ROS. Other management and resource constraints on these areas will be more restrictive, and management for a Partial Retention VQO should not hinder management of these areas.
- d. Modification VQO:
- 1) Foreground Distance Zone - Manage vegetation with a range of ages and including small timber (size class 3). Normally, timber harvest openings will be limited to 20 acres.
 - 2) Middleground and Background Distance Zones - The even-aged silvicultural system will be applied.
2. Base facility and vegetative treatment along major roadways on approved corridor viewshed plans as these are prepared.
 3. Schedule and implement rehabilitation to improve the visual appearance of landscapes which do not meet the adopted VQO for the area. Undertake enhancement measures where there is potential for greater scenic quality, consistent with other resource objectives, and where cost effective.

WATERSHED & WATER QUALITY (including key watersheds)

1. Within All Watersheds

- a) Identify depleted watershed areas during the project environmental assessment process. Incorporate improvement activities as a part of the project.
- b) Cooperate with Federal, State, local, and Tribal agencies, and private landowners to develop watershed-based Coordinated Resource Management Plans or other cooperative agreements to meet aquatic conservation strategy objectives.
- c) Analyze projects that propose land disturbing activities for their effects on the appropriate level of watershed (normally second to fourth order watersheds) in order to prevent excessive cumulative watershed effects on stream channel condition and water quality. Cumulative watershed effects (CWE) analysis will be used to gauge impacts of past, present, and proposed management activities on a watershed.

- d) Implement Best Management Practices (BMP) to meet water quality objectives and maintain and improve the quality of surface water on the Forest. Identify methods and techniques for applying the BMPs during project level environmental analysis and incorporate them into the associated project plan and implementation documents. During implementation of a project, utilize additional BMPs as necessary to protect water quality even though the BMPs may not be specifically identified in the project plans (See Plan Appendix G.)
- e) Schedule watershed improvement projects based on the Watershed Improvement Needs Inventory (WIN) and the following general priorities, while maintaining a balanced Forest-wide program:
 - i. Watersheds within the Forest which exceed their cumulative watershed threshold, if existing (e.g. resulting from wildfire);
 - ii. The key watersheds: Middle Fork of the Eel River, Black Butte River, and Thatcher Creek;
 - iii. Watershed improvements within the Upper Stony Creek watershed which complement the objectives of the Upper Stony Creek Watershed Study (PL 566 Project); and
 - iv. Other improvement opportunities, e.g. degraded riparian areas, that are identified through project planning and field review.
- f) Design and implement watershed restoration projects in a manner that promotes long term ecological integrity of ecosystems, conserves the genetic integrity of native species, and attains aquatic conservation strategy objectives. (FSEIS ROD, p. C-37)
- g) Secure water rights for existing and future consumptive and nonconsumptive use, where known. Identify and attempt to secure in-stream flows needed to maintain riparian resources, channel conditions, and aquatic habitat (FSEIS ROD p. C-37). Where uses and needs are not adequately known, assess needs and uses based on the following priorities: domestic uses, anadromous fisheries, other cold water fisheries, wildlife, recreation, and all others.

2 Within Key Watersheds (this direction applies to the watersheds of the Middle Fork of the Eel River, Black Butte River, and Thatcher Creek)

- a) Prohibit road construction in remaining unroaded portions of inventoried (RARE II) roadless areas within key watersheds. (FSEIS ROD p. C-7)
- b) Reduce existing system and nonsystem road mileage within key watersheds and outside of roadless areas. Road closures with gates or barriers do not qualify as a reduction in road mileage. If funding is insufficient to implement reductions, permit no net increase in the amount of roads in key watersheds. (FSEIS ROD p. C-7)
- c) Assign key watersheds the highest priority for watershed restoration. (FSEIS ROD p. C-7)
- d) Conduct watershed analysis prior to management activities, except minor activities such as those categorically excluded under NEPA with the exception of timber harvesting. Require watershed analysis prior to timber harvesting. (FSEIS ROD p. C-7)

WILD & SCENIC RIVERS

- 1 Complete preparation of Wild and Scenic River Management Plans for the Middle Fork of the Eel River, the Balm of Gilead Creek, and the Middle Fork of Stony Creek. Management Plans will

provide for the use and management of the River corridors in a manner consistent with the Wild and Scenic River and Wilderness Acts.

2. Complete suitability analysis for the Black Butte River, Cold Creek, and the lower portion of Thomes Creek, for possible inclusion in the Wild and Scenic Rivers System, within two years of Forest Plan approval. Complete Study Reports/Legislative Environmental Impact Statements for those rivers found to be suitable for inclusion, and make final recommendation decisions, within three years of Plan approval.
3. Provide protection to the outstandingly remarkable values found along the Black Butte River, Cold Creek, and Thomes Creek pending completion of additional analysis to determine the suitability of each River for inclusion in the National Wild and Scenic River System.
4. Address attainment of aquatic conservation strategy objectives in Wild and Scenic River management plans. (FSEIS ROD p. C-34)

WILDERNESS

Direction for wilderness management is found in the Wilderness Management Prescription and in Management Areas 13 and 27.

WILDLIFE & FISH (including Arthropods and Mollusks)

1. Manage sensitive animal species to ensure that they do not become threatened or endangered because of Forest Service action.
2. Provide for viable populations of Management Indicator Species by maintaining moderate to high habitat capability, as described by the habitat capability models found in Appendix E of the Forest Plan. These models will be reviewed as needed to incorporate the most current information on habitat needs of fish and wildlife species. Management activities will comply with species recovery plans (threatened and endangered species) and habitat management plans, as they apply to the Mendocino National Forest.
3. Peregrine Falcon -
 - a) Establish a one mile radius primary management zone around peregrine falcon nest sites. Direct activities within this zone towards promoting high habitat capability for peregrines as described by the habitat capability model (HCM) in Appendix E. Evaluate each site on a case-by-case basis for specific mitigation measures needed.
 - b) Strive to meet the Regional habitat and population goals for peregrine falcons. This goal is currently three nesting pairs on the Mendocino. Based upon occupancy and reproductive records for California, this will require maintaining habitat capability at 6 sites. In order to accomplish this goal it will be necessary to manage for and survey potential sites, as well as monitor known existing sites. Map, record, and protect from adverse management and human disturbance, all known or newly discovered nesting territories, in accordance with guidelines found in the Pacific States Recovery Plan for the American Peregrine Falcon (1982). Develop site specific management plans for each active eyrie.

4. Bald Eagle -

- a) Establish primary and secondary management zones around bald eagle nest sites. The primary management zone is defined as an area around the nest site where human disturbance will be minimized with special consideration given to maintaining a suitable nest site in perpetuity. The secondary management zone serves as a buffer and includes regularly used foraging and roosting areas. These zones will be determined on a site specific basis. Manage the habitat within these zones to provide for high habitat capability as described in the HCM in Appendix E.
- b) Develop site-specific management plans for all occupied nest territories. Specify public closures as needed around identified roost sites in the Plans.
- c) Meet population goals and follow guidelines for habitat and species management outlined in the Pacific States Bald Eagle Recovery Plan. The Forest goal is three nesting pairs and one wintering area. Survey potential sites and take action to encourage use of suitable areas, and improve habitat where needed.

5. Osprey -

Minimize disturbing activities between March 1 and August 15, within approximately 600 feet of any active osprey nests that are found.

6. Goshawk -

Maintain viable populations of goshawks by providing suitable nesting and foraging habitat within the matrix, in addition to habitat located within other land allocations, such as LSRs. Implementation of these guidelines should be integrated into landscape level planning, rather than approached as single species protection.

- a) Establish a primary nest zone of a ½ mile radius circle (504 acres) around the last known nest or the geometric center of a cluster of all known nests. Within this circle, maintain 60% (300 acres) in dense mature forest cover (>60%CC, >24"dbh [4B,C+]). The existing nest stand should be used to determine desired forest structure. This 300 acres should include the active and historic nest stands and be as contiguous as possible relative to existing conditions. The remaining 40% should be managed for a habitat mosaic dominated by large trees and open understories (3N,G - 4P,N,G+), but lower canopy closure (40-60%) and small openings are allowable.
- b) Establish a foraging habitat zone of a 1.0 mile radius circle centered on the primary nest zone. The foraging habitat zone is the 1506 acres outside of the primary nest zone. Maintain 60% (900 acres) in a mosaic of mid-mature (3N,G+) to late successional forest condition. Desired conditions include open understories, large coarse woody debris, large snags, small openings. The remaining 40% can be younger stands and small openings.
- c) Restrict habitat modifying activities between March 1st and August 31st within primary nest zones. Restrict loud and/or continuous noise within ¼ mile of active nest sites during the same time period. Permit normal levels of vehicle traffic on existing roads in cases where goshawks appear to be habituated to such activities. Determine the actual distance and timing based on the physical and biological features of each site and the nesting chronology of individual birds.
- d) Within LSRs and other reserved lands, complete an inventory of the identified nest sites to determine occupancy and nesting status. Inventory of other areas will be completed as a part of project planning.

- e) Encourage the use of underburning, fuels reduction, and thinning to achieve desired habitat conditions within the primary nest and foraging habitat zones.

7. Northern Spotted Owl -

Assure that viable populations of northern spotted owls are maintained through implementation of the land allocations and standards and guidelines in this Land and Resource Management Plan, which fully incorporates all applicable land allocations and standards and guidelines published in the Record of Decision and Final Supplemental Environmental Impact Statement for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl, April, 1994.

a) Within Mapped Late-Successional Reserves (LSRs):

- 1) Implement the standards and guidelines specified in Management Prescription Rx 6 Late-Successional Reserves and the additional direction provided for Management Areas 16 through 21.
- 2) Conduct necessary inventory and monitoring activities to determine population densities and habitat trends within each area.
- 3) Review proposals to remove individual or small groups of trees for administrative needs (e.g. hazard trees) or other resource management activities (e.g. campground expansion) on a case by case basis. Utilize the standardized hazard tree definitions.
- 4) Update mapped LSRs as new LSRs resulting from designating 100 acres around known spotted owl activity centers (as of January 1, 1994). Follow LSR standards and guidelines within the new LSRs.

b) Within the Matrix

- 1) Locate and map 100 acres of the best, nearest habitat around known spotted owl activity centers (as of January 1, 1994) prior to any ground disturbing activities. Once located, follow LSR standards and guidelines. (FSEIS ROD p. C-45)
- 2) Manage stands surrounding the 100 acre activity centers to reduce risks of natural disturbance (FSEIS ROD p. C-45)
- 3) Maintain direction for management of lands reserved from timber production (eg Backcountry areas, RNAs, Wild and Scenic Rivers), or other lands classified as unsuitable for timber production, which would affect the suitability of such lands for northern spotted owl habitat. Changes in direction for administratively withdrawn areas require LRMP amendments. Amendments that propose to significantly reduce protection for late successional or old growth forest related species, or reduce protection for aquatic ecosystems, are subject to review by the Regional Ecosystem Office to determine if the objectives of the standards and guidelines published in the ROD for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl, would be significantly adversely affected (FSEIS ROD p C-29)
- 4) Exclude management activities within approximately a ½ mile radius of active nest sites from February 1 through July 31. Determine the actual distance and timing based on the physical and biological features of each site and the nesting chronology of individual birds.

8. Fringed Myotis, Silver-haired Bats, Long-eared Myotis, Long-legged Myotis, and Pallid Bats -

a) Within the Matrix:

- 1) Conduct surveys of crevices in caves, mines, and abandoned wooden bridges and buildings for the presence of roosting bats. Caves are defined in the Federal Cave Resources Protection Act of 1988 as "any naturally occurring void, cavity, recess, or system of interconnected passages which occur beneath the surface of the earth or within a cliff or ledge (. . . but not including any . . . man-made excavation) and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or man-made." Searches should be conducted during the day in the summer to locate day roosts and maternity colonies; at night during the late summer and fall to locate night roosts, which are important for reproduction; and during the day in the winter to locate hibernacula. If bats are found, identify the species and determine for what purpose the site is being used by bats. (FSEIS ROD p. C-43)
- 2) Prohibit timber harvest within 250 feet of sites containing bats as an interim measure. Develop standards and guidelines and/or mitigation measures in project or activity plans for the site, following an inventory and mapping of resources. The purpose of the standards and guidelines is to protect the site from destruction, vandalism, disturbance from road construction or blasting, or any other activity that could change cave or mine temperatures or drainage patterns. The size of the buffer, and types of activities allowed within the buffer, may be modified through the standards developed for the specific site. Retain abandoned bridges or buildings contingent on safety concerns. (FSEIS ROD p. C-43)

b) Within Other Land Allocations:

- 1) Protect known occupied caves from destruction, vandalism, disturbance from road construction or blasting, or any other activity that could change cave or mine temperatures or drainage patterns. (FSEIS ROD p. C-43)

9. Red-legged Frog - Within all Land Allocations

- 1) Follow the aquatic conservation strategy.
- 2) Follow final implementation strategies developed following a final FWS recovery plan, if the red-legged frog is listed as an endangered species.

10 Mollusks and Arthropods - Within all Land Allocations:

- 1) Manage known sites of species listed under category 1 in table 4-5. Acquire information on these known sites, and make this information available to project planners. Use this information in the design or modification of activities. In most cases, the appropriate action will be to protect relatively small sites on the order of tens of acres. (FSEIS ROD p. C-4)
- 2) Conduct surveys, within the known range, for species listed under category 2 in table 4-5, prior to ground disturbing activities implemented in fiscal year 1999 and beyond. These surveys may be conducted at a scale most appropriate to the species, and, for most species, the surveys would start at the watershed analysis level with identification of likely species locations based on habitat. Likely locations would then be thoroughly searched prior to implementation of activities. For some species, the identification of likely sites may be most appropriately done at the scale of individual projects. Design surveys for maximum efficiency, and utilize multispe-

cies surveys where they would be most efficient. Design surveys to minimize the number of site visits needed to acquire credible information. (FSEIS ROD p. C-5)

- 3) Establish managed sites and standards and guidelines for species located during surveys described above. (FSEIS ROD p. C-5)
- 4) Participate in general regional surveys for species in category 4 listed in table 4-5, designed to acquire additional information and to determine necessary levels of protection. These surveys will be initiated no later than fiscal year 1996 and will be completed within 10 years. (FSEIS ROD p. C-6)
- 5) Minimize intensive burning, unless appropriate for certain specific habitats, communities or stand conditions. Plan prescribed fires to minimize the consumption of litter and coarse woody debris. Minimize soil and litter disturbance resulting from yarding and operating heavy equipment. Reduce the intensity and frequency of site treatments. Soil compaction, and removal or disturbance of humus layers and coarse woody debris may impact populations of arthropods and other litter dwelling organisms. (FSEIS ROD p. C-44)

11. Snag Management Within the Matrix

- a) Retain, as a minimum, a level of snags sufficient to support species of cavity nesting birds (with the exception detailed at b) below) at 40 percent of potential population levels based on published guidelines and models. Meet the 40 percent minimum standard throughout the matrix, with per acre requirements met on average areas no larger than 40 acres. To the extent possible, snag management within harvest units should occur within the areas of green tree retention. The needs of bats should also be considered in these standards and guidelines as those needs become better known. Snag recruitment trees left to meet an identified, near-term (less than 3 decades) snag deficit do not count toward green tree retention requirements. (FSEIS ROD p. C-42)
- b) Maintain adequate numbers of large snags and green tree replacements for future snags within white-headed woodpecker, pygmy nuthatch, and flammulated owl ranges and in appropriate forest types. To accomplish this, no snags over 20 inches dbh within these species' range and within appropriate forest types will be marked for cutting, unless they meet the standardized hazard tree definitions. In addition, provide sufficient numbers of green trees to provide for the full (100 percent) population level, in the longer term, of white-headed woodpeckers, pygmy nuthatches, and flammulated owls. The snag requirements for these species must be added to snag requirements for other species of cavity nesting birds. Site specific analysis and application of a snag recruitment model, taking into account tree species, diameters, falling rates, and decay rates, will be required to determine appropriate tree and snag species mixes and densities. (FSEIS ROD p. C-45-47)
- c) Provide sufficient recruitment trees (culls or live green trees) to ensure snag densities do not decrease below minimum levels over time.
- d) Develop standardized definitions of hazard trees to guide hazard tree marking during harvesting, road and recreation site maintenance, or other activities (FSEIS ROD p. C-46)

12. Coarse Woody Debris -

- a) Develop and use models for groups of plant associations and stand types that can be used as a baseline for developing prescriptions providing for a renewable supply of large down logs, well distributed across the matrix landscape in a manner that meets the needs of species and provides for ecological functions. (FSEIS ROD p. C-40)

- b) Until such models are available, maintain a minimum of three recently-downed logs per acre, averaged over 40 acres. Logs will be greater than 20 inches in diameter (large end). Logs will be greater than ten feet in length, with one log per acre greater than 20 feet in length. Log densities in excess of 400 logs/40 acres will not contribute to meeting this requirement.
- c) Retain coarse woody debris already on the ground and protect to the greatest extent possible from disturbance during treatment (eg slash burning and yarding) which might otherwise destroy the integrity of the substrate. (FSEIS ROD p. C-40)
- d) Leave down logs within forest patches that are retained under green tree retention guidelines in order to provide the microclimate that is appropriate for organisms that use this substrate. (FSEIS ROD p. C-41)
- e) Refine standards and guidelines for specific geographic areas through planning based on watershed analysis and adaptive management. (FSEIS ROD p. C-41)

13. Hardwood Retention -

- a) Retain a minimum of five square feet of basal area per acre in hardwood trees 12 inches in diameter or larger, averaged over 40 acres within each compartment. Retain at least one sound tree/acre greater than 20 inches in diameter. Where current hardwood stocking is insufficient to meet these requirements, retain and manage a sufficient number of hardwoods less than 12 inches in diameter to provide five square feet of total hardwood basal area when the smaller hardwoods reach 12 inches in diameter, while allowing for anticipated mortality. Species selected for retention will be representative of species present on site prior to treatment.
- b) Within identified key summer and winter ranges and migration corridors, retain the following levels of hardwoods, averaged over 40 acres within each compartment:
 - i) Mixed Conifer - 15 square feet of basal area per acre in hardwood trees 12 inches in diameter or larger. If less than 15 square feet currently exists, the existing level may be reduced by no more than 75%. Retain at least one sound tree/acre greater than 20 inches in diameter. Where current hardwood stocking is insufficient to meet these requirements, retain and manage a sufficient number of hardwoods less than 12 inches in diameter to provide 15 square feet of total hardwood basal area when the smaller hardwoods reach 12 inches in diameter, while allowing for anticipated mortality. Species selected for retention will be representative of species present on site prior to treatment.
 - ii) Conifer Hardwood - 35 square feet of basal area per acre in hardwood trees 12 inches in diameter or larger. If less than 35 square feet currently exists, the existing level may be reduced by no more than 75%. Retain at least one sound tree/acre greater than 20 inches in diameter. Where current hardwood stocking is insufficient to meet these requirements, retain and manage a sufficient number of hardwoods less than 12 inches in diameter to provide 35 square feet of total hardwood basal area when the smaller hardwoods reach 12 inches in diameter, while allowing for anticipated mortality. Species selected for retention will be representative of species present on site prior to treatment.

- 14. Determine the need to provide higher levels of hardwood retention on a case by case basis. The basal area in hardwoods may exceed the minimums specified in Standards and Guideline 12, where a site specific analysis has been documented, and has determined the need exists in order to provide for the viability of hardwood dependent species

15. Coordinate other resource management (e.g. timber harvest, road construction, recreation, etc.) activities to minimize human disturbance in key wildlife areas such as deer fawning and wintering areas, goshawk nest sites, and peregrine falcon eyries.
16. Implement cooperative USFS/CDFG deer herd plans after review for conformance with Forest Plan direction. Coordinate any needed changes in these plans with the CDF&G. Establish habitat manipulation priorities based on habitat objectives and most limiting habitat variables identified in the deer herd plans.
17. Cooperate with Federal, State, and local agencies in improving wildlife habitat for all species.
 - a) Coordinate with California Department of Fish and Game, U.S. Fish and Wildlife Service, and other concerned agencies in the preparation and implementation of Federal and State Endangered Species recovery plans, the California Fish and Wildlife Management Plan (Sikes Act Plan), and species habitat plans
 - b) Permit scientific investigations, monitoring, and artificial propagation as needed to reach population recovery levels for threatened and endangered species (see Glossary in DEIS)
18. Require that new and reconstructed powerlines meet current raptor safety protection standards.
19. Complete a Forest-wide assessment of opportunities for reintroduction of elk. Continue to seek establishment of a free-roaming elk population on the Forest.
20. Provide medium to high quality habitat for resident trout and anadromous fish species, as defined by the habitat capability models including the following key concerns:
 - a) Maintain high water quality values in accordance with the standards and guidelines for watershed.
 - b) Retain streamside vegetation along perennial streams so that at least 60% of the stream surface is shaded between 11 a.m. and 4 p.m. from June 1 to September 30.
 - c) On intermittent tributaries, provide a favorable habitat for bottom flora and fauna communities that are sources for fish forage and contributors of cool water flows to main streams.
21. Design and implement fish and wildlife habitat restoration and enhancement activities in a manner that contributes to attainment of aquatic conservation strategy objectives. (FSEIS ROD, p. C-37)
22. Coordinate with the California Department of Fish & Game to eliminate non-native fish stocking, and to reduce or eliminate direct impacts, such as those resulting from over fishing and poaching.
23. Develop Coordinated Resource Management Plans or other cooperative agreements to protect riparian values within the key watersheds of mixed ownership.
24. Design, construct and operate fish and wildlife interpretive and other user-enhancement facilities in a manner that does not retard or prevent attainment of aquatic conservation strategy objectives. For existing fish and wildlife interpretive and other user-enhancement facilities inside riparian reserves, ensure that aquatic conservation strategy objectives are met. Where Aquatic Conservation Strategy objectives cannot be met, relocate or close such facilities. (FSEIS ROD p. C-37)
25. Cooperate with federal, tribal, and state wildlife management agencies to identify and eliminate wild ungulate impacts that are inconsistent with attainment of aquatic conservation strategy objectives. (FSEIS ROD p. C-38)

26. Cooperate with federal, tribal, and state fish management agencies to identify and eliminate impacts associated with habitat manipulation, fish stocking, harvest and poaching that threaten the continued existence and distribution of native fish stocks occurring on Federal lands. (FSEIS ROD p. C-38)
27. Avoid and discourage activities that would disturb summer steelhead during periods of critical low flow or high water temperatures.

The following table, 4-5, displays the species to be protected through survey and manage standards and guidelines found in the TES Plants and Wildlife and Fish sections of this chapter. This table is derived from table C-3 published in the 1994 Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (the President's Plan). The biology and geographic extent of many of these species is not currently well known, and additions or deletions to table 4-5 will be made as new information is available.

Table 4-5 Species to be protected through survey and management standards and guidelines.
Each of the four survey strategies is described in the text.

SPECIES	1	2	3	4
MYCORRHIZAL FUNGI				
Boletes, low elevation				
.Tylopilus pseudoscaber	X		X	
Rare Boletes				
.Boletus haematinus	X		X	
.Boletus pulcherrimus	X		X	
Rare False Truffles				
.Gautieria otthii	X		X	
.Leucogaster citrinus	X		X	
.Rhizopogon brunneiniger	X		X	
.Rhizopogon flavofibrillosus	X		X	
.Destuntzia fusca	X		X	
.Destuntzia rubra	X		X	
Chanterelles				
.Cantharellus cibarius			X	X
.Cantharellus subalbidus			X	X
.Cantharellus tubaeformis			X	X
Chanterelles - Gomphus				
.Gomphus bonarii			X	
.Gomphus clavatus			X	
.Gomphus floccosus			X	
.Gomphus kauffmanii			X	
Rare Chanterelles				
.Cantharellus formosus	X		X	
Uncommon Coral Fungi				
.Ramaria abietina			X	
.Ramaria araiospora	X		X	
.Ramaria botrytis var. aurantiiramosa	X		X	
.Ramaria concolor f. tsugina			X	
.Ramaria coulterae			X	
.Ramaria fasciculata var. sparsiramosa	X		X	
.Ramaria gelatiniaurantia	X		X	
.Ramaria largentii	X		X	
.Ramaria rubella var. blanda	X		X	
.Ramaria rubrievanescens	X		X	
.Ramaria rubripermanens	X		X	
.Ramaria suecica			X	
.Ramaria thiersii	X		X	

Survey Strategies: 1 = manage known sites; 2 = survey prior to activities and manage sites; 3 = conduct extensive surveys and manage sites; 4 = conduct general regional surveys.

Table 4-5 Species to be protected through survey and management standards and guidelines.
Each of the four survey strategies is described in the text.

SPECIES	1	2	3	4
Rare Coral Fungi				
Ramarua amyloidea	X		X	
.Ramaria aurantiiscescens	X		X	
.Ramaria celerivirescens	X		X	
.Ramaria claviramulata	X		X	
Ramaria concolor f. marri	X		X	
Ramaria cyaneigranosa	X		X	
.Ramaria hilaris var. olympiana	X		X	
.Ramaria lorthamnus	X		X	
.Ramaria maculatipes	X		X	
.Ramaria rainierensis	X		X	
.Ramaria rubribrunnescens	X		X	
.Ramaria stuntzii	X		X	
.Ramaria verlotensis	X		X	
.Ramaria gracilis	X		X	
.Ramaria spinulosa	X		X	
Phaeocollybia				
.Phaeocollybia attenuata			X	
.Phaeocollybia californica	X		X	
.Phaeocollybia carmanahensis	X		X	
.Phaeocollybia dissiliens	X		X	
.Phaeocollybia fallax			X	
.Phaeocollybia gregaria	X		X	
.Phaeocollybia kauffmanii	X		X	
.Phaeocollybia olivacea			X	
.Phaeocollybia oregonensis	X		X	
.Phaeocollybia piceae	X		X	
.Phaeocollybia pseudofestiva			X	
.Phaeocollybia scatesiae	X		X	
.Phaeocollybia sipei	X		X	
.Phaeocollybia spadicea			X	
Rare Gilled Mushrooms				
.Cortinarius verrucisporus	X		X	
Cortinarius wiebeae	X		X	
Uncommon Ecto-polypores				
.Albatrellus ellisii			X	
.Albatrellus fletti			X	
Rare Ecto-polypores				
.Albatrellus avellaneus	X		X	

Survey Strategies: 1 = manage known sites; 2 = survey prior to activities and manage sites, 3 = conduct extensive surveys and manage sites; 4 = conduct general regional surveys.

Table 4-5. Species to be protected through survey and management standards and guidelines.
Each of the four survey strategies is described in the text.

SPECIES	1	2	3	4
Tooth Fungi				
.Hydnum repandum			X	
Hyndum umbilicatum			X	
Phellodon atratum			X	
Sarcodon fuscoindicum			X	
Sarcodon imbricatus			X	
Rare Zygomycetes				
Glomus radiatum	X		X	
SAPROBES (Decomposers)				
Uncommon Gilled Mushrooms				
Baeospora myriadophylla			X	
Chrysomphalina grossula			X	
.Collybia bakerensis	X		X	
.Fayodia gracilipes (rainierensis)			X	
Gymnopilus punctifolius	X		X	
.Marasmius applanatipes	X		X	
.Mycena hudsoniana	X		X	
.Mycena lilacifolia			X	
.Mycena marginella			X	
.Mycena monticola	X		X	
.Mycena overholtsii	X		X	
.Mycena quinaultensis	X		X	
Mycena tenax			X	
Mythicomyces corneipes			X	
.Pholiota albivelata	X		X	
Stagnicola perplexa			X	
Rare Gilled Mushrooms				
Clitocybe subditopoda	X		X	
Clitocybe senilis	X		X	
Bondarzewia Polypore				
Bondarzewia montana	X	X	X	
Rare Resupinates and Polypores				
Aleurodictus farlowii	X		X	
Dichostereum granulatum	X		X	
Cudonia monticola			X	
.Gyromitra californica			X	
.Gyromitra esculenta			X	

Survey Strategies: 1 = manage known sites; 2 = survey prior to activities and manage sites; 3 = conduct extensive surveys and manage sites; 4 = conduct general regional surveys

Table 4-5. Species to be protected through survey and management standards and guidelines.
Each of the four survey strategies is described in the text.

SPECIES	1	2	3	4
Rare Resupinates and Polypores (cont'd)				
.Gyromitra infula			X	
.Gyromitra melaleucoides			X	
.Gyromitra montana (syn G. gigas)			X	
.Otidea leporina			X	
.Otidea onitica			X	
.Otidea smithii	X		X	
.Plectania melastoma			X	
.Podostroma alutaceum			X	
.Sarcosoma mexicana			X	
.Sarcosoma eximia			X	
.Spathularia flavida			X	
Rare Cup Fungi				
.Aleuria rhenana				
.Helvella compressa	X		X	
.Helvella crassitunicata	X		X	
.Helvella elastica	X		X	
.Helvella maculata	X		X	
Branched Coral Fungi				
.Clavulina cinerea			X	X
.Clavulina cristata			X	X
.Clavulina ornatipes			X	X
Mushroom Lichen				
.Phytoconis ericetorum			X	X
Parasitic Fungi				
.Asterophora lycoperdoides			X	
Cauliflower Mushroom				
.Sparassis crispa			X	
LICHENS				
Rare Forage Lichen				
.Bryoria tortuosa	X		X	
Riparian Lichens				
.Ramalina thrausta				X
.Usnea longissima				X
Rare Oceanic Influenced Lichens				
.Beullia oidealea	X		X	

Survey Strategies. 1 = manage known sites; 2 = survey prior to activities and manage sites; 3 = conduct extensive surveys and manage sites; 4 = conduct general regional surveys

Table 4-5. Species to be protected through survey and management standards and guidelines.
Each of the four survey strategies is described in the text.

SPECIES	1	2	3	4
BRYOPHYTES				
Kurzia makinoana	X	X		
Ptilidium californicum	X	X		
Scouleria marginata				X
Ulota meglaspora	X	X		
MOLLUSKS				
Helminthoglypta hertleiri	X	X		
VASCULAR PLANTS				
Botrychium minganense	X	X		
Cypripedium fasciculatum (Klamath)	X	X		
Cypripedium montanum (West Cascades)	X	X		
ARTHROPODS				
Canopy herbivores (south range)				X
Coarse wood chewers (south range)				X
Litter and soil dwelling species (south range)				X
Understory and forest gap herbivores				X

Survey Strategies: 1 = manage known sites; 2 = survey prior to activities and manage sites; 3 = conduct extensive surveys and manage sites; 4 = conduct general regional surveys.